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ABSTRACT

Holland's (1973) theory of vocational choice proposes a typology of, and a match between, people and occupations. The Self Directed Search (SDS) can be used to assess people's occupational orientation types. To assess the construct validity of Holland's theory of occupational preferences, 171 female industrial workers participated in a study, using the SDS, Vroom's expectancy valence (E-V) model, and a multidimensional scaling (MDS) algorithm. The subjects represented four typical female occupations, and two typical male occupations. Analyses were performed to test the congruencies between the women's types of occupational choices (where they currently worked) and their personality types and occupational preferences, as derived from the SDS, E-V, and MDS. Results showed that the E-V produced a congruency of personality and occupational type more than double the size produced by the SDS. The MDS identified the closest and second closest occupations to the ideal preference of each subgroup. The findings lend moderate support for Holland's congruency hypothesis, using any of the three methods. (Implications for counselors in using the three methods in client assessment and counseling are discussed.) (MCF)

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A MULTIMETHOD ASSESSMENT OF HOLLAND'S CONGRUENCY: THE EXPECTANCY AND MULTIDIMENSIONAL SCALING ROUTES

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A MULTIMETHOD ASSESSMENT OF HOLLAND'S CONGRUENCY: THE EXPECTANCY AND MULTIDIMENSIONAL SCALING ROUTES

ABSTRACT

The construct validity of Holland's (1973) theory of vocational choices was assessed. The congruency between types of personality/occupational preferences of industrial workers and the types of their occupational choices was tested using Holland's Self Directed Search (SDS), Vroom's expectancy-valence (E-V) model, and a multidimensional scaling (MDS) algorithm applied to occupational preference. Subjects were 171 women employed in four and two female and male typical occupations, respectively. Results (1) lend moderate construct support to Holland's congruency hypothesis, and (2) show that the E-V model does a better job predicting Holland's types of occupational choices than does Holland's SDS. Implications for counselors are discussed.

A MULTIMETHOD ASSESSMENT OF HOLLAND'S CONGRUENCY: THE EXPECTANCY AND MULTIDIMENSIONAL SCALING ROUTES

One of the most investigated theories of vocational psychology is Holland's (1973) theory of vocational choices. However, the concerns of the more than 400 Holland-related studies are not distributed evenly among different aspects of the theory. Specifically, the concurrent and predictive validities of the theory have been tested much more often (e.g., Walsh et al., 1983) than its construct validity (e.g., Gottfredson, 1980); considering the link between external and construct validity of a theory (Lynch, 1982), the main concern of the present study falls under the latter category.

Briefly, Holland's (1973) theory proposes a typology of, and a match between, people and occupations. Specifically, the theory advances that (1) most people can be categorized into six types: Realistic (R), Investigative (I), Artistic (A), Social (S), Enterprising (E), and Conventional (C); (2) occupations (i.e., work environment) can be similarly classified; and (3) a significant portion of people of a type usually seek, and are sought in, occupations of a similar type. The theory further predicts certain attitudinal and behavioral consequences of the congruency between people's types and their occupational choice.

To operationalize the theory, Holland introduced the Self Directed Search (SDS) by which counselors and researchers can assess clients' or subjects' occupational orientation types. The SDS typifies subjects according to their preferred activities and occupations as well as their self assessment of their own skills and capabilities. For example, an individual who prefers occupations, does activities, and possesses skills of a Realistic type is likely to be assessed as an R type person.

Because the SDS mainly assesses types and correlates of occupations preferred by an individual, the theory's external and construct validity can be tested using different methods that purport to measure the same construct (occupational preference); a multimethod validity, that is. The present study has two main goals: (1) to assess occupational preferences of industrial workers via the SDS and two other methods, which purport to measure occupational preference; and (2) assess Holland's proposed congruency of types of occupational preference (which are presumably influenced by people's personality types) and the types of their work environment. The two additional methods applied here use the cognitive expectancy-valence (E-V) approach and a multidimensional scaling (MDS) rationale.

The E-V motivational process method: Instead of predicting occupational preferences via the personality route, the E-V approach, formally presented by Vroom (1964), suggests that:

$$\text{Preference of a particular occupation by individual } i = \sum \left(\text{His/her belief that the occupation will lead to attainment of certain outcomes} \times \text{The desirability of each of these outcomes to individual } i \right) \quad \text{Equation 1}$$

Because the above formulation suggests a within-subject model, all what equation 1 predicts is the list of preferred (or disliked) occupations by individual i. If the rationale of Holland's theory is true, then it follows that the personality of individual i must have influenced his/her preferences. After the subjects' most preferred occupation is derived using equation 1, it can be classified into one of Holland's six types. Preferred occupations of all subjects can then be tested against the types of subjects' occupational choices (i.e., current work environments) for congruency.

The MDS Method: The rationale here is that people's preferences for certain occupations can be translated into distances: Occupations that are far apart are not similarly preferred by the same type of people. The program employed in present study (MAGIC-Schonemann & Wang, 1972) requires preference input in the form of (occupational) rankings. Based on the Brady-Terry-Luce, and Coombs models of judgement, the routine uses the preferences of individuals, subgrouped according to a criterion (i.e., Holland's types), to (a) search for an ideal position of the group (i.e. preference among occupations) in the multidimensional space, and (b) find the distances of all stimuli (i.e., occupations) from that ideal position (i.e., most preferred occupational position) of the subgroup. It follows, thus, that for Holland's congruency hypothesis to hold, the shortest distances between the ideal location of a subgroup of a particular type (e.g., R) should be between occupations of a similar type (i.e., R), and this should hold for a significant proportions of the subgroups examined.

Hypothesis: Types of personality (as assessed by the SDS) and occupational preferences (as assessed by the E-V and MDS methods) are congruent with types of occupational choice (i.e., current work environments) of industrial workers.

Method

Sample: One hundred and seventy one women representing female workers in four female typical occupations: 49 licensed practical nurses (LPN), 9 registered nurses (RN), 26 hairstylists (HSY), and 55 secretaries (SEC); and two male typical occupations: 26 female police officers (FPO), and 15 craftswomen (CW) were employed in the present study.

Procedure: Separated by other measures not reported here, the SDS, E-V, and MDS were employed as follows. First, all women completed the SDS and were classified into Holland's six categories. Second, 27 occupations, which require the same educational level of the sample, were selected from Holland's Occupational Finder (Holland's, 1973) to represent the six occupational types. Each participant was asked to rank (1 = most preferred,..., 27 = least preferred) and rate on a 100-point scale (100 = most preferred,..., 1 = least preferred) the 27 occupations. Correlations between these two preference measures reflected a parallel form reliability = - 95. Then, rankings of women typified in the same subgroup, according to their personality type, were used as input to MAGIC. The two occupations closest, in distance, to each subgroup were identified by the algorithm and classified into Holland's six types. Third, each women responded to a valence (V) measure reflecting her preference for 22 work outcome levels (e.g., pay, autonomy, fulfilling society's sex role expectations) on a desirability scale (-4 = very undesirable,...,0 = indifferent,..., 4 = very desirable). Participants then responded to an instrumentality (I) measure reflecting how much each agreed that five occupations (HSY, LPN, SEC, FPO, in addition to a fifth occupation of each participant's choice) lead to the attainment of the 22 levels of work outcomes; a 9-point scale was employed where -4 = completely disagree, 0 = neither agree nor disagree, and 4 = completely agree. The Σ VI was then computed for each subject for each of the five occupations. The one occupation with the highest positive (or lowest negative) value (Vroom, 1964) was identified and typified into one of Holland's six categories.

Analysis: Each of the above three methods identified certain preferred occupational types produced by each individual or subgroup. Three χ^2 analyses were performed to test the congruencies between women's types of occupational choices

(i.e., where they currently work), on the one hand, and their personality types and their occupational preferences, as derived by SDS, E-V, and MDS, on the other hand.

RESULTS AND DISCUSSION

Generally, Holland's theory received moderate support in the present research. Table 1 shows, in part, that Holland's congruency of personality and occupational types produced a $\chi^2_{10} = 34.13$, ($p<.001$). Alternatively, occupational preference derived by Vroom's E-V motivational process resulted in a $\chi^2_{10} = 70.87$ ($p.<.001$), more than double the size produced by Holland's SDS. Finally, the MDS identified the closest and second closest occupations to the ideal preference of each subgroup. When the types of these occupations were identified according to Holland's theory, it was found that 35.7% of the closest occupations and 42.8 of the second closest occupations to all subgroups are congruent with the type of work environments of the respective subgroups. Together, the most and second most preferred occupations were congruent in 39.3% of the cases ($p<.05$). Also presented in Table 1 are the correlational values (Cramer's V) based on the χ^2 value produced by each method and the amount of error reduced when each of the SDS and E-V methods were employed.

Two major conclusions can be made. First, Cramer's Vs and Goodman-Kruskal's λs reflect a moderate support for the congruency of occupational preference and choice, and hence a moderate support for Holland's theory, using any of the three methods. Second, Vroom's cognitive motivational process model (i.e., the E-V theory) provides higher predictability of workers occupational choice. Because Holland s (1973) theory provides lists of work outcomes that are most preferred by each personality type, it may be more useful for

counselors and clients to identify the latter's most preferred work outcomes, the specific occupations available in the labor markets for the particular client, and then apply the E-V model to predict occupations most congruent with his/her personality type. Applying the motivational process approach as suggested above capitalizes on the foundations of two prominent theories: Vroom's expectancy-valence and Holland's typology of personality and vocational choices.

Moreover, by knowing the work outcomes which motivates an individual, more realistic job previews and occupational counseling can be conducted. Further, the use of instrumentality measures in assessing the E-V model provides counselors with a concrete idea of their clients' perception of the instrumentality of different occupations in attaining different work outcomes. This is particularly vital when counseling first-time employees who may possess only limited labor market experience.

References

Gottfredson, L. S. (1980). Construct validity of Holland's occupation typology in terms of prestige, census, Department of Labor, and other classification systems. Journal of Applied Psycnology, 65, 697-714.

Holland, J. L. (1973). Making vocational choices. N. J.: Prentice Hall.

Lynch, John G. (1982). On the external validity of experiments in consumer research. Journal of Consumer Research, 9, 225-239.

Schonmenann, P. H. and Wang, M. M. (1972). A individual difference model for the multidimensional analysis of preference data. Psychometvika, 37, 350-361.

Vroom, Victor (1964). Work and Motivation. New York: Wiley & Sons, Inc.

Walsh, B. W., Hilderbrand, J. O., Ward, C. M., and Matthews, D. F. (1983). Holland's theory and non-college degreed working black and white women. Journal of Vocational Behavior.

Table 1*

X^2, Camer's V, Goodman-Kruskal's λ, and Percentage of Congruency of Personality and Occupational Preferences, with Occupational Choice Types of Industrial Female Workers

Method	X^2 Value	Cramer's (Correlational) V	Goodman-Kruskal's (error reduction) λ	Percentage	Significant Level
1. Holland's SDS	34.13	.316	.227		.001
2. Vroom's E-V	70.87	.486	.407		.001
3. Multidimensional Scaling of Occupational Preferences				39.3	.05

*Detailed Results are available upon request